

REMARKS

The claims are 3-8 and 10-13 with claims 3 and 10 being independent.

Claims 3 and 10 were amended to clarify the intended invention to recite attendant advantages. Claims 3, 7 and 8 were also amended to resolve minor informalities as to form. Reconsideration of the claims is expressly requested.

On March 14, 2005, Applicants' undersigned attorney conducted a brief telephone discussion with the Examiner to review a procedural issue. Applicants desired to understand if the rejection on art would be continued if the Dentinger reference was removed as prior art by the filing of a certified translation of the instant priority application. The Examiner indicated that the art rejection would not be withdrawn by the mere filing of the certified translation (if supportive) since the Bae reference would then be relied upon as essentially equivalent to Dentinger.

In order to comply with the objection to the drawings advanced by the Examiner, the specification has been amended at page 29 and page 30 to correct the typographical error wherein numeral "31" should have read --13'-- as seen in Fig. 4D.

In Fig. 4D, numeral 17 has been added to show exposure light and numeral 11 added to Fig. 5A to designate the substrate. In Figs. 11A, 11B, 12 and 13A-13D, a "PRIOR ART" legend has been added. Appropriate replacement figures for drawings are enclosed.

A new Title of the Invention has been provided as suggested by the Examiner. The specification has also been amended pursuant to the Examiner's suggested changes recited on pages 4 and 5 of the Official Action. If the Examiner believes other

changes are warranted, Applicants will consider them. However, it should be understood that a patent application need only be understood by a skilled artisan; it is not necessary to write an application as if one were contending for a Pulitzer Prize. The above-noted amendments to the specification contain no new matter. Since the Examiner suggested the changes, it is not believed necessary to describe where the changes are supported.

The objection to claim 8 as being in improper form has been rendered moot by making claim 8 depend solely on claim 3. The other stated objections to claim 8 have been met by amendment pursuant to the Examiner's suggestions.

The objection to claims 7 and 8 under Rule 112, first paragraph, as containing language unsupported in the specification has been met by amending the specification at page 23, lines 4-6 to add appropriate wording based on the supporting disclosure on page 6, lines 19-23 and in original claim 7.

The objection to claims 3-8 under Rule 112, second paragraph, has been met by appropriate amendment of claim 3 to provide proper antecedent bases.

Claims 3 and 10 were amended to state the edge curl problem recited on page 4, line 10 to page 5, line 4 and as solved, for example, on page 17, line 14 to page 19, line 15 and throughout the specification.

Claims 3, 7 and 10-13 were rejected over Masaki JP '153A in view of Felton '197 and further in view of either Bae '624 or Dentinger '890. Claims 4, 5 and 7 were rejected over the same references, further in view of Osawa JP '106A and either Bloomstein '170 or '234. Claims 6 and 7 were also rejected over the previous references, further in view of Engstrom '083. Bae is cited for forming plural stacked resist patterns

involving sequential steps with stacked and aligned latent images in a vertical profile. Dentinger is cited for multilayer resist patterning. Accordingly, Bae and Dentinger provide the teaching for plural layers, imaged in turn, with all overlapping images developed in a single combined step resulting in a combined resist profile of plural patterned resist layers. Such teaching is absent from Masaki or Felton. The rejections are respectfully traversed.

Initially, Dentinger, filed March 5, 2001, has been removed as a reference by the filing of a certified English translation of JP 2000-280505, filed September 14, 2000. It will be appreciated that the translation shows that the present claimed invention is supported by the priority application, JP 2000-280505.

Masaki '153 generally discloses an electroconductive paste and adding an ultraviolet ray absorbing agent to prevent edge curl. Felton '197 discloses an electroconductive paste and modifying the composition to prevent edge curl. Bae '624 discloses conducting resist forming, film forming and exposure, sequentially, and, thereafter, batch development.

Bae discloses a resist pattern-forming method. In Bae, it is said that at the time of exposing a thick film resist, any degrading of the resolution of the resist pattern, due to limitation of the focal depth, can be prevented. According to Embodiment 2 in Bae, a resist, subjected to exposure in a pattern, is laminated through a non-reflective layer. Thereafter, the resist is subjected to a batch-development.

The present invention differs from Bae, for example, in that an electroconductive film is used and, further, there is no a non-reflective layer present. The present invention provides a special advantage in that edge curl due to a volume

contraction at a batch baking step (e.g., 500°C) is suppressed. The reason why edge curl is suppressed according to the present invention is not completely understood. It is believed that a relaxation force from the respective layers acts against the volume contraction more effectively than a relaxation force from a single layer. The relaxation force from the plural layers acts to provide only a small deformation in individual layers to suppress edge curl.

Bae fails to teach or suggest the steps of (a) sequentially repeating the film-forming and exposure steps to form a laminated latent image; (b) developing the laminated image by removing unexposed portions, and (c) baking the developed image from the laminated film.

Instead, Bae teaches in column 3, lines 25-30 forming a resist film; developing the film; and then baking the film to cure the primary photoresist pattern 7'. After this single baked image is formed, an intermediate layer 10 is overcoated on the baked image. Next, a secondary resist film 9 is coated over layer 10. This is said to minimize reflected light, column 3, lines 44-50. The resulting structure is developed and the intermediate layer 10 is etched.

Accordingly, the step of baking disclosed in Bae is not a batch baking of a plurality of layers. Instead, the Bae baking step is of single layer, which does not provide the edge curl suppression of the present invention. Therefore, the defects and deficiencies of the primary references are not remedied by Bae.

The claims should be allowed and the case passed to issue.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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(c) Amendments to the Drawings

In the amended drawings, numeral 17 has been added to Fig. 4D to show the exposure light; numeral 11 has been added to the substrate layer below layer 12 and in Figs. 11A, 11B, 12 and 13A-13D a “PRIOR ART” legend has been added based on the disclosure at specification pages 1 and 3. Replacement sheets for each of the amended drawings has been provided.